



US 20060047013A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0047013 A1**  
**Ito et al.** (43) **Pub. Date: Mar. 2, 2006**

(54) **WATER BASE INK COMPOSITION,  
METHOD OF INK JET RECORDING  
THEREWITH AND RECORD**

(30) **Foreign Application Priority Data**

Sep. 27, 2002 (JP) ..... 2002-284270

**Publication Classification**

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(51) **Int. Cl.**  
**C03C 17/00** (2006.01)  
**C09D 11/00** (2006.01)  
(52) **U.S. Cl.** ..... **523/160; 523/161**

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(57) **ABSTRACT**

An aqueous ink composition having high storage stability is provided. The aqueous ink composition of the invention contains a coloring agent, a "dispersing resin containing a repeating unit structure (I) having an unneutralized group and a repeating unit structure (II) having a neutralized group and capable of being hydrated and/or dissolved in water", a water-soluble organic solvent capable of swelling and/or dissolving the foregoing repeating unit structure (I), and water.

(21) **Appl. No.: 10/524,975**

(22) **PCT Filed: Sep. 25, 2003**

(86) **PCT No.: PCT/JP03/12230**



US 20040077749A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0077749 A1**  
**Yatake** (43) **Pub. Date: Apr. 22, 2004**(54) **WATER-BASED PIGMENT INK  
COMPOSITION****Publication Classification**(76) **Inventor: Masahiro Yatake, Nagano (JP)**(51) **Int. Cl.<sup>7</sup> ..... C03C 17/00; C09D 5/00**  
(52) **U.S. Cl. .... 523/160; 523/161****Correspondence Address:****LADAS & PARRY  
26 WEST 61ST STREET  
NEW YORK, NY 10023 (US)**(57) **ABSTRACT**(21) **Appl. No.: 10/468,238**

Disclosed is a water-based pigment ink composition comprising, as colorants, (1) a surface treated pigment having a water-dispersibility imparting group introduced to the surface thereof and (2) a water-dispersible polymer-encapsulated pigment which is a pigment wholly coated with a polymer. The water-based ink composition exhibits good color developability and satisfactory abrasion resistance, causes little blurring, and has excellent storage stability.

(22) **PCT Filed: Feb. 22, 2002**(86) **PCT No.: PCT/JP02/01615**



US005830927A

**United States Patent** [19]

Vanderhoff et al.

[11] **Patent Number:** **5,830,927**[45] **Date of Patent:** **Nov. 3, 1998**[54] **PRINTING INK COMPOSITIONS, METHODS  
FOR MAKING SAME AND USES THEREOF**[75] Inventors: **John W. Vanderhoff**, Bethlehem, Pa.;  
**Philippe Huwart**, Walhain, Belgium[73] Assignee: **Lehigh University**, Bethlehem, Pa.[21] Appl. No.: **906,468**[22] Filed: **Aug. 5, 1997****Related U.S. Application Data**

[63] Continuation of Ser. No. 229,557, Apr. 19, 1994, abandoned.

[51] Int. Cl.<sup>6</sup> ..... **C09D 11/10**; C08F 2/50[52] U.S. Cl. .... **522/81**; 522/84; 522/85;  
106/23 R; 106/22 C; 106/30 A; 106/31 R;  
106/20 B[58] Field of Search ..... 522/3, 84, 85,  
522/81; 106/20 B, 23 R, 23 C, 30 A, 31 R[56] **References Cited****U.S. PATENT DOCUMENTS**

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Leavitt; Michael R. Novack[57] **ABSTRACT**

Aqueous based printing ink compositions adapted for use in gravure and flexographic printing on hydrophobic substrates are prepared by combining a low-viscosity resin emulsion having an average particle diameter of less than about 0.5 microns and comprised of hydrophobic, moisture resistant, adherent resin forming components with a pigment paste containing a water-soluble polymer. The printing inks are substantially devoid of volatile organic solvent.

**16 Claims, No Drawings**